# Stormwater Rulemaking

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# Agenda

- Proposed Stormwater Rulemaking
  - Rulemaking Options Under Considerations
  - Key Stormwater Rulemaking Activities

# Improving the Approach to Stormwater Management

Traditional approach – convey stormwater quickly from site to waterbody or detention ponds

Approach is not adequately controlling water quality and quantity impacts from discharges from increased development: pollutant loading, stream erosion, increased runoff/reduced infiltration, changes to stream geomorphology and impacts to aquatic habitat

New approach - using Green Infrastructure

- View stormwater as a resource
- Manage stormwater on-site
- Reduce pollutant loads to waterbodies

# Green Infrastructure Approaches

Infiltration ~ Evapotranspiration ~ Capture & Use

- Bioretention
- Permeable pavements
- Green roofs
- Cisterns & rain barrels
- Trees & expanded tree boxes
- Reforestation & restoration
- Parking & street designs
- Water Conservation

# Examples of Green Infrastructure Implementation in State and Local Stormwater Programs

- States are integrating green infrastructure principles into their permits
  - North Carolina - Montana - Maryland
  - New Jersey - Oregon - Wisconsin
  - Ohio - Connecticut - Colorado
  - West Virginia - Maine - Washington
  - California - Vermont - Kansas
  - Massachusetts - New York
- Communities are adopting green infrastructure approaches
  - Philadelphia, PA - Portland, OR - Washington, DC
  - Kansas City, MO - Chicago, IL - Richmond, VA
  - Milwaukee, WI - Louisville, KY - Seattle, WA

# Stormwater Rulemaking

- EPA is considering developing performance standards for discharges from new and redevelopment that promote green infrastructure practices
- As part of this effort, EPA is also:
  - Exploring options for expanding the universe of federally regulated municipal separate storm sewer system (MS4s),
  - Exploring the desirability of establishing different requirements for transportation facilities,
  - Evaluating options for establishing retrofit requirements on MS4s,
  - Evaluating additional provisions specific to the Chesapeake Bay
- EPA intends to propose a rule in September 2011 and to take final action by November 2012.

# Benefits of Stormwater Rule

- Proactively Protects Local Water Quality
  - Development and sprawl are increasing at a rate faster than population growth.
  - EPA's rule seeks protect water quality from these adverse water quality impacts.
  - Post construction standard will better manage stormwater from newly developed and redeveloped sites.
- Helps to Restore Impaired Waters
  - Stormwater discharges are a significant cause of water quality impairment.
  - One goal of EPA's rule is to restore these impaired waters by establishing standards that must be met as redevelopment occurs and by promoting retrofits of stormwater practices that have not been effective in protecting streams from stream erosion and pollutant loading.
- Green infrastructure can provide a cost-effective means of protecting water quality from stormwater discharges

# Benefits of Stormwater Rule

- Cities should also realize other benefits from a rule that promotes green infrastructure. Green infrastructure:
  - Reduces the amount of rainwater that enters sewer systems, thereby reducing overflows of raw or partially treated wastewater
  - Increases job diversity by creating a demand for certified installers, operations and maintenance staff, and landscape architects
  - Creates more liveable communities by providing more trees, vegetation and open space
  - Mitigates urban heat island effects
  - Reduces energy usage
  - Recharges groundwater and restores depleting groundwater supplies
  - Creates more habitat for wildlife
  - Improves air quality

- Green infrastructure offers cities a holistic approach to solving many problems.

- EPA's stormwater rule aims to provide standards with appropriate flexibility so that states and cities can tailor solutions and take advantage of the benefits of green infrastructure in a way that best meets their needs. The rule also aims to provide flexibility were certain practices may be limited due to water rights issues.

# MS4 Expansion Regulatory Options

- No change – 2010 Urbanized Area defined by Census.
- Extend coverage to jurisdiction boundaries of the MS4 rather than urbanized area boundary
- Extend coverage to urbanized clusters (Census)
- Extend coverage to Metropolitan Statistical Areas (Census)
- Extend coverage to Metropolitan Planning Areas (FHA)
- Regulate based on a population or impervious cover threshold
- Extend coverage to watershed boundaries (using HUC defined watershed)
- Regulate all MS4s and allow States to exclude areas
- Require states to designate additional regulated MS4s

# Possible Requirement for New Development

- Natural hydrology with regard to discharge volume, rate and duration must be maintained or restored for discharges from newly developed sites using practices that infiltrate, evapotranspire, or harvest and use the excess discharge volume.
- This could be based on the hydrology of the land before construction (e.g., forest, prairie, meadow).

# Regulatory Options for New Development Standard to Meet Requirement

1. Permitting authorities must, in their permits or state rule, establish specific numeric standards that ensure compliance with the requirement

Note: EPA plans to provide guidance to states to assist them in developing the numeric standard.

2. Permitting authorities must, in their permits or state rule, comply with the requirement by either:

a. Adopting the numeric criteria in the federal rule, or

b. Developing State-specific numeric criteria that are as protective as the criteria in the federal rule

# Alternative Compliance

- For all options, there could be alternative compliance options if the numeric standard cannot be met. For example,
  - groundwater pollution concern for source water protection
  - conflict with water rights
  - site constraints, especially for new transportation projects

- Permitting authority could develop offsite mitigation or payment in lieu programs, develop an alternative standard or develop another mitigation measure

# Additional Regulatory Considerations

- EPA could apply the requirement to sites discharging to the MS4 AND sites outside regulated MS4s
- EPA expects to establish a size threshold of sites
- EPA could allow states to approve a numeric standard developed for a specific site with unique conditions using an EPA calculator as an alternative to meeting state's numeric standard

# Current Volumetric Retention Standards for Discharges from New Development

| State or Locality (date enacted) | Size Threshold | Standard |
|---|---|---|
| Vermont (2003, draft 2010) | 1 acre | Capture 90 percent of the annual storm events |
| New Hampshire (2009) | 1 acre/ 100,000 sq ft outside MS4 | Infiltrate, evapotranspire or capture first 1.0 inch from 24-hr storm |
| Wisconsin (2010) | 1 acre | Infiltrate runoff to achieve 60% -90% of predevelopment volume based on impervious cover level |
| West Virginia (2009) | 1 acre | Keep and manage on site 1” rainfall from 24-hour storm preceded by 48 hours of no rain |
| Montana (2009) | 1 acre | Infiltrate, evapotranspire, or capture for reuse runoff from first 0.5” of rain |
| Portland, OR (1990) | 500 sq ft of impervious cover | Infiltrate 10-yr, 24-hr storm |
| Anchorage, AK (2009) | 10,000 sq ft | Keep and manage the runoff generated from the first 0.52 inches of rainfall from a 24 hour event preceded by 48 hours of no measureable precipitation. |

# Regulatory Options for Redevelopment Standard

1. Redevelopment standard is the same as the standard for new development, however additional exceptions are provided
2. Same as Option 1, except that credits are given for developing in certain areas (e.g., brownfields)
3. Redeveloped sites must be designed and constructed to reduce by x% the impervious cover from the preconstruction condition
4. Combination of (1) and (3) – some states already have this

# Current Volumetric Standards for Onsite Retention of Discharges from Redevelopment

| State or Locality (date enacted) | Size Threshold | Redevelopment Standard |
|---|---|---|
| Vermont (2003, draft 2010) | 1 acre | Reduce impervious cover by 20% or treat 20% of WQ volume |
| New Hampshire (2009) | 1 acre/ 100,000 sq ft outside MS4 | Same as new development |
| Wisconsin (2010) | 1 acre | 40% TSS reduction from parking areas and roads or MEP |
| West Virginia (2009) | 1 acre | 0.2” reduction of 1” on site retention standard and additional 0.2” reductions exist |
| Montana (2009) | 1 acre | Same as new development |
| Portland, OR (1990) | 500 sq ft of impervious cover | Same as new development |
| Anchorage, AK (2009) | 10,000 sq ft | Same as new development |

# Possible Regulatory Approach for Municipal Retrofits

- Requirement – MS4s must develop and implement a retrofit plan

  - What could a municipal retrofit plan look like?
    - Identification of sensitive waters
    - Identification of stormwater contribution to degradation or impairment
    - Development of goals and milestones for reducing stormwater contributions
    - Identification of priority projects and initiatives to meet permit-term milestones including retrofits for public sites undergoing redevelopment or routine repair and maintenance
    - Development of incentives for retrofits on private property

  - Who it could apply to?
    - Phase I MS4s
    - Phase I & II MS4s
    - Phase I & II MS4 that have waters impaired for stormwater

  - Exploring regulatory options for determining the timeframe over which the plan is implemented

# Examples of Retrofit Programs

- Portland, OR
  - Manage 56% of stormwater by 2040
- Milwaukee, WI
  - Reduce TSS by 40% by 2013 in MS4 areas
- Philadelphia, PA
  - Manage 34% of impervious cover over next 20 years
- NYC's Sustainable Stormwater Management Plan
  - Improve public access to tributaries by 90% by 2030 and detain or capture over 1 billion gallons of stormwater annually
- Use of Residual Designation Authority in the Charles River Watershed, MA
  - Reduce P annual discharge by 65%
- Washington DC
  - Using Green Buildout Model to identify goals to reduce stormwater discharges to District's rivers

# Examples of Chesapeake Bay Specific Requirements

- Apply the post construction standard to smaller sized newly developed and redeveloped sites than covered by the national standard.
- Expand the universe of regulated discharges beyond what would occur through national provision.
- Establish shorter timeframes to implement retrofit requirements and extend retrofit requirements to large existing properties that do not discharge to a federally regulated MS4.
- Require MS4s to restrict the use of fertilizers.

# Industrial Program

- Replace the SIC code system with the NAICS system to modernize the identification of industrial discharges covered by NPDES stormwater regulations.
- Phase II MS4 carry out industrial program as described in Phase I requirements.
- Clarify that stormwater discharges from government owned/operated maintenance yards are industrial stormwater discharges.

# Key Rulemaking Activities

- Conducted listening sessions and national webcasts
- Distributed questionnaires to regulated MS4s, transportation-related MS4, unregulated MS4s, NPDES permitting authorities and owners/developers of developed sites to gather information - Summer and Fall 2010)
- Sites visits to collect data
- Monthly meetings with States
- Developing models to analyze the costs and pollutant reductions associated with stormwater control options; to evaluate the impacts of stormwater under baseline conditions and each control option; and to assess the financial impact of each control option
- Supplementing the Report to Congress submitted under CWA 402(p)(5)
- EPA intends to propose a rule in September 2011 and to take final action by November 2012.

www.epa.gov/npdes/stormwater/rulemaking

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